

OPTICAL SPECTROMETER AND METHOD FOR  
COMBUSTION FLAME TEMPERATURE DETERMINATION

ABSTRACT

5           A solid state optical spectrometer for combustion flame  
temperature determination comprises: a first photodiode device for obtaining a  
first photodiode signal, the first photodiode device comprising a silicon  
carbide photodiode and having a range of optical responsivity within an OH  
band; a second photodiode device for obtaining a second photodiode signal,  
10   the second photodiode device comprising a silicon carbide photodiode and a  
filter, the second photodiode device having a range of optical responsivity in a  
different and overlapping portion of the OH band than the first photodiode  
device; and a computer for obtaining a ratio using the first and second  
photodiode signals and using the ratio to determine the combustion flame  
15   temperature.